

Work Order ID 86987

Friday, July 06, 2012 3:10:39 PM

86987

Page 1

Item ID: D350-748-241TRN

Accept

N900040100

Setup

Start

NS1

Revision ID:

Item Name: Crosstube Turning Detail

Stop

NS2

Start Date: 7/6/2012 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 7/12/2012 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: *JMF*

Date: 12-07-06 Tooling:

Date:

Run

Start

NR1

QC:

Date: SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
----------	--------------

D350-748-241	F
--------------	---

100

100

Mori Seiki

Mori Seiki CNC Lathe Large

Memo 0.00

1-Fill tube with sand & install plugs on both ends as per Folio FA647

2-Turn first side as per Folio FA647

3-File transition lines smooth.

FOLIO REV:

DWG REV:

F

110

110

QC

Quality Control

QC1- Inspect dimensions to dimension sheet

0.00

Memo

0.00

l *Ø*

Mori L

12/07/11

l *Ø*

Mori L

12/07/11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Page 2

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NS1

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Item Name: Crosstube Turning Detail

Stop

NS2

Start Date: 7/6/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 7/12/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

120

Mori Seiki

Mori Seiki CNC Lathe Large

Memo

0.00

1 /

KC -12-7-12

1-Turn second side as per Folio FA647
2- File transition lines smooth.
3-Scribe part # as per Dwg D350-748-241
FOLIO REV: K
DWG REV: F

130

130

QC

Quality Control

QC1- Inspect dimensions to dimension sheet

0.00

1 /

KC 12-7-12

140

140

QC

Quality Control

QC8- Inspect parts - second check

0.00

Memo

0.00

66
03
DAE

12-7-23

W/O:		WORK ORDER CHANGES					
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Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

150

150

Crosstubes

Crosstubes

160

160

Outsource

Outsource process - Heat Treat

170

170

Packaging

Packaging

Large Fab

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Memo 0.00
1-DRILL HOLES FOR HEAT TREAT USING DT9806(HOLES MUST BE
ALIGNED ON SAME LINE ON BOTH CUFFS)

2-Grind machining marks

Rm

12-7-27

- 06/07/24

Outsource process - Heat Treat

0.00

Memo 0.00
Issue P/O: 17601
Heat Treat to min 180 KSI As per Dwg D350-748-241
Sand Blast tube after Heat Treat
Possible Supplier: Vac Aero
Ensure Certificate of Conformity is attached

Receive & Inspect for Damage & Mat'l Certs

0.00

Memo 0.00
Ensure certificate of conformaty is attached

1X
10/25/2012 12-8-21
SP

W/O: 86987

WORK ORDER CHANGES

DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
		See Part 12-1915					

Part No: D350-748-241TRN PAR #: _____ Fault Category: _____ NCR: Yes No DQA: Date: 12/16/17
 Resolution: _____ Disposition: _____ QA: N/C Closed: Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12/09/21	W0	Supplier did not sandblast our PO 17601	12/09/21	Send for sandblasting to remove scale only Issue PO 17979 JMI	12/10/21	DAS 16 0-88	12/09/21	DAS 16 0-88
		RC: Poor Communication		Receive & Inspect	12/10/21			

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Page 4

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Cust Item ID:

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Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

180

QC6- Inspect dimensions to drawing

180

QC

Quality Control

Set Up/
Run Hours

0.00

(DAS
16
S.S)

Tool ID

0.00

Tool #

12/07/28

Plan
Code

12/07/28

Accept
Qty

0.00

Reject
Qty

0.00

Reject
Number

0.00

Insp.
Stamp

12/07/28

190

190

Packaging

Packaging

Packaging

0.00

Memo

0.00

Identify and stock in kanban rack

Location: LG

12/07/28

200

200

QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

12/10/15 JJ

12/10/15

W/O:		WORK ORDER CHANGES					
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Picklist Print

Friday, July 06, 2012 3:10:38 PM

Page 1

Work Order ID: 86987

Parent Item: D350-748-241TRN

Start Date: 7/6/2012

Required Date: 7/12/2012

Parent Item Name: Crosstube Turning Detail

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A New Issue 08-03-06 DD verified by:ec
IPP Rev B Removed polish 08.04.02 EC verified by : DD
IPP Rev C Removed LPS-3 08.06.23 Ec verified by: DD IPP Rev D 11.02.24 as per dwg
rev.F DD verf: JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6015-125 Crosstube Material		Manufactured	No			120	Each	28.0000	1	1			

Location	Loc Qty	Loc Code
HALL	28	
61380	4	
72511	24	

man, L 12/07/06

W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	86887
Description: Crosstube Assembly (AS350/355 High Aft)		Part Number:	D350-748-241
Inspection Dwg: D350-748-241 Rev: F			Page 1 of 2

FIRST ARTICLE INSPECTION CHECKLIST

Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.240	+0.005/-0.000	2.243	✓	VERN	CNC -08
	2.180	+0.005/-0.000	2.184	✓		
	2.180	+0.005/-0.000	2.185	✓		
	2.208	+0.005/-0.000	2.213	✓		
	2.234	+0.005/-0.000	2.235	✓		
	2.253	+0.005/-0.000	2.256	✓		
	2.272	+0.005/-0.000	2.277	✓		
	2.299	+0.005/-0.000	2.306	✓		
					↓	
	0.063	+/-0.010	.063	✓	VERN	
	4.26	+/-0.030	4.26	✓	VERN	↓
	R0.063	+/-0.010	.063	✓	R6	—
	R0.50	+/-0.030	.50	✓	R6	—
SIDE B	2.240	+0.005/-0.000	2.239	✓	VERN	CNC -08
	2.180	+0.005/-0.000	2.180	✓		
	2.180	+0.005/-0.000	2.180	✗		
	2.208	+0.005/-0.000	2.203	✓		
	2.234	+0.005/-0.000	2.226	✗		
	2.253	+0.005/-0.000	2.257	✓		
	2.272	+0.005/-0.000	2.277	✓		
	2.299	+0.005/-0.000	2.306	✓		
					↓	
	0.063	+/-0.010	.063	✓		
	4.26	+/-0.030	4.26	✓		↓
	R0.063	+/-0.010	.063	✓	R6	—
	R0.50	+/-0.030	.50	✓	R6	—
	122.70	+/-0.060	122.70	—	TAPE	L6-22

W/O:		WORK ORDER CHANGES					
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DART AEROSPACE LTD

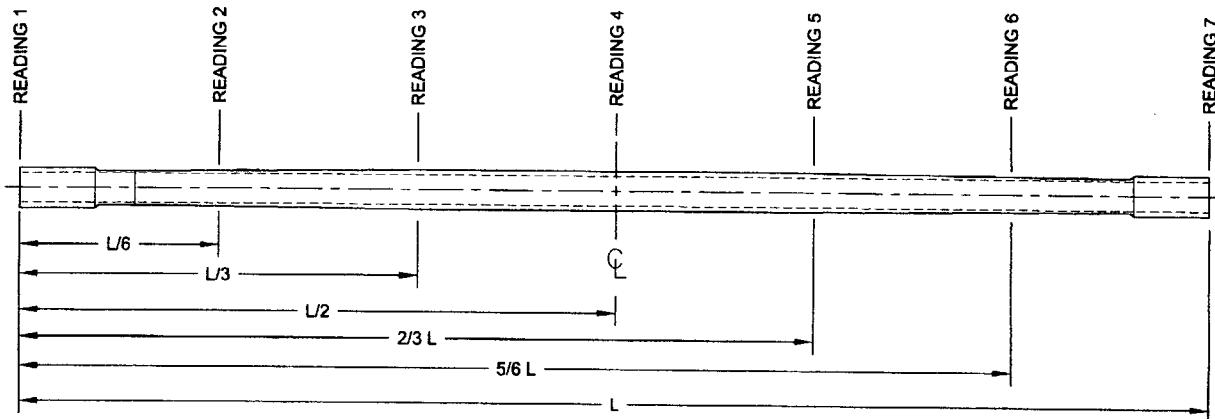
Work Order: 86987

Description: Crosstube Assembly (AS350/355 High Aft)

Part Number: D350-748-241

Inspection Dwg: D350-748-241 Rev: F

Page 2 of 2

WALL THICKNESS MEASUREMENT

Location	WALL THICKNESS MEASUREMENT (IN)				Deviation Δw (max-min)	TOLERANCE
	w1	w2	w3	w4		
READING 1 L= 0"	.129	.124	.120	.130	.010	
READING 2 L= 20.5	.122	.123	.103	.116	.020	
READING 3 L= 41	.151	.161	.159	.152	.151	.010
READING 4 L= 61.5	.159	.155	.156	.158	.004	0.030"
READING 5 L=	.148	.143	.161	.165	.022	
READING 6 L=	.109	.108	.128	.128	.02	
READING 7 L=	.122	.129	.141	.146	.024	

Calibration Result

Actual Block Thickness: 100-100

Sitescan 250 Measured Thickness: 100-100

Measured by:	KC
Date:	12-7-12

Audited by:	
Date:	12-7-23

Preliminary Approval:	Date:

Rev	Date	Change	Revised by	Approved
A	07.01.17	New Issue (P/O D350-748-201)	KJ/JLM	
B	12.02.02	Dwg Rev updated	KJ	
C	12.06.04	Wall thickness form added	KJ	

W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries

D

F

Item	Qty	Part Number	Description
1	X	D350-748-241	CROSSTUBE ASSEMBLY (AS 350/355 HI AFT)
2	1	D6015-125	CROSSTUBE (OR D6018-125)
3	2	D3502-1	SUPPORT
4	2	D2856-400-710	ABRASION STRIP
5	1	AELS-1032-225	INSERT
6	1	NAS1149D0363J	WASHER (OR AN960JD10)
7	2	MS21920-20	CLAMP (PER DART SPEC. M-MS21920-20)
8	1	MS27039-1-10	SCREW

F 8/9/87

C

GENERAL NOTES:

F 1) MATERIAL: MANUFACTURED FROM D6015-125 OR D6018-125
FINISHED LENGTH = 122.700±0.06

F 2) FINISH: MAGNETIC PARTICLE INSPECT PER DART QSI 038 4.2
CADMIUM PLATE PER AMS-QQ-P-416B, CLASS 1, TYPE II
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2

F 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.

F 4) UNITS: INCHES UNLESS OTHERWISE NOTED.

F 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX

F 6) IDENTIFICATION: DART PART NUMBER "D350-748-241" AND BATCH NUMBER ON INSIDE OF CUFF
PER DART QSI 044 6.4 (VIBRATING STYLUS)

F 7) WEIGHT: 29.85 lbs

F 8) PART IS SYMMETRIC ABOUT CENTERLINE, EXCEPT FOR Ø0.297 HOLE.

F 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT ALL EDGES FROM MACHINING
LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH. NOTE: ALL HOLES ARE DRILLED AFTER
BENDING.

F 10) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES. MAXIMUM TUBE FLATTENING DUE TO
BENDING IS 6% BASED ON O.D.

F 11) HEAT TREAT TO MIN. 180 KSI PER MIL-T-6736 OR AMS 2759-1C AFTER TURNING. ACCEPTABLE TO
VERIFY TENSILE STRENGTH BY HARDNESS TEST PER ASTM E18 TO 40-45 HRC.

F 12) INSTALL D2856-400-710 ABRASION STRIPS WITH A GAP ON BOTTOM SIDE OF CROSSTUBE,
CENTERED OPPOSITE D3502-1 SUPPORT, PER QSI 035.

F 13) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES,
NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY.
CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE
MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO
CRACKING/CHIPPING/GROOVES.

F 14) TORQUE CLAMPS 60 TO 80 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT
NUT HAS NOT BOTTOMED OUT AFTER TORQUING.

F 15) MAX TWIST AFTER BENDING: WITH XTUBE LAYED FLAT ON SURFACE, THE DIFFERENCE BETWEEN
CUFF HEIGHTS FROM THE SURFACE MAY BE NO LARGER THAN 0.25 (ZN C1-3).

RELEASED
2011-01-01
NP

F	ADD HRC TEST OPTION (B8-1) PER PAR 09-040, ADD TWIST LIMIT (A8-1, C1-3), ADD D6015-125 OPTION (C8-1), STOCK DIM NOW MACHINED (D14)	CP	10.11.23
E	REVISE GENERAL NOTES; UPDATE TO CURRENT STANDARDS; RELOCATED FLAG #6 PER PAR 08-046 (ZN A8-3); ADD TOLERANCES (ZN C6-3, D2-3)	RF	09.09.30
D	MAG. PARTICLE AND CAD PLATE AS MFD.	CP	06.10.31
C	ADD CAD PLATING	CP	06.08.14
B	ADD D6018-125 & PRIME AND PAINT	CP	06.06.30
A	NEW ISSUE	CP	06.03.31
REV.	DESCRIPTION	BY	DATE
DESIGN	PP	DART AEROSPACE LTD	
DRAWN	PP	HAWKESBURY, ONTARIO, CANADA	
CHECKED		REV. F	
MFG. APPR.	BB	DRAWING NO.	
APPROVED	BB	D350-748-241	SHEET 1 OF 4
DE APPR.	BB	TITLE	SCALE
DATE	10.11.23	CROSSTUBE (AS 350/355 HI AFT)	NTS
		COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL. IT IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

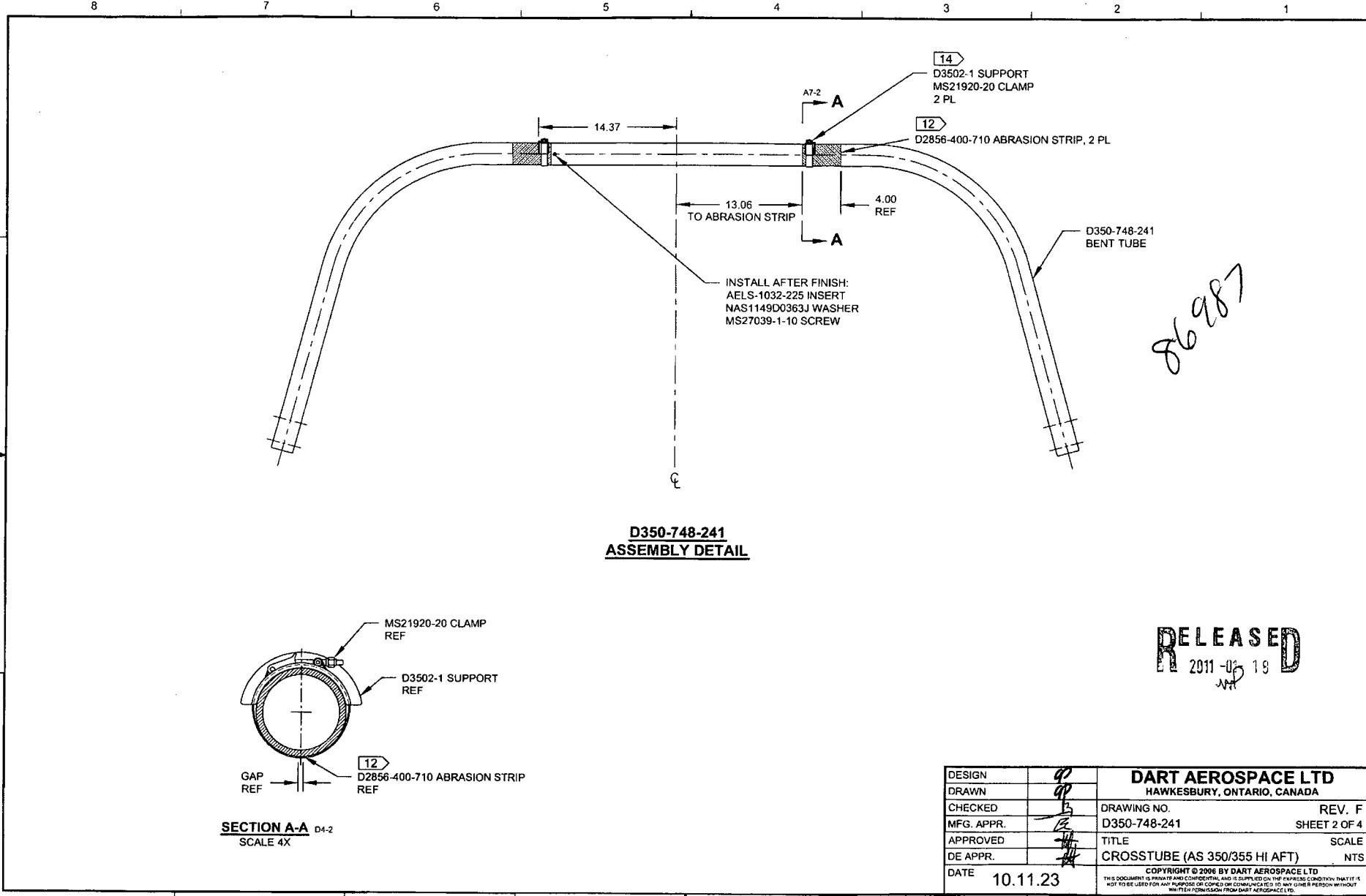
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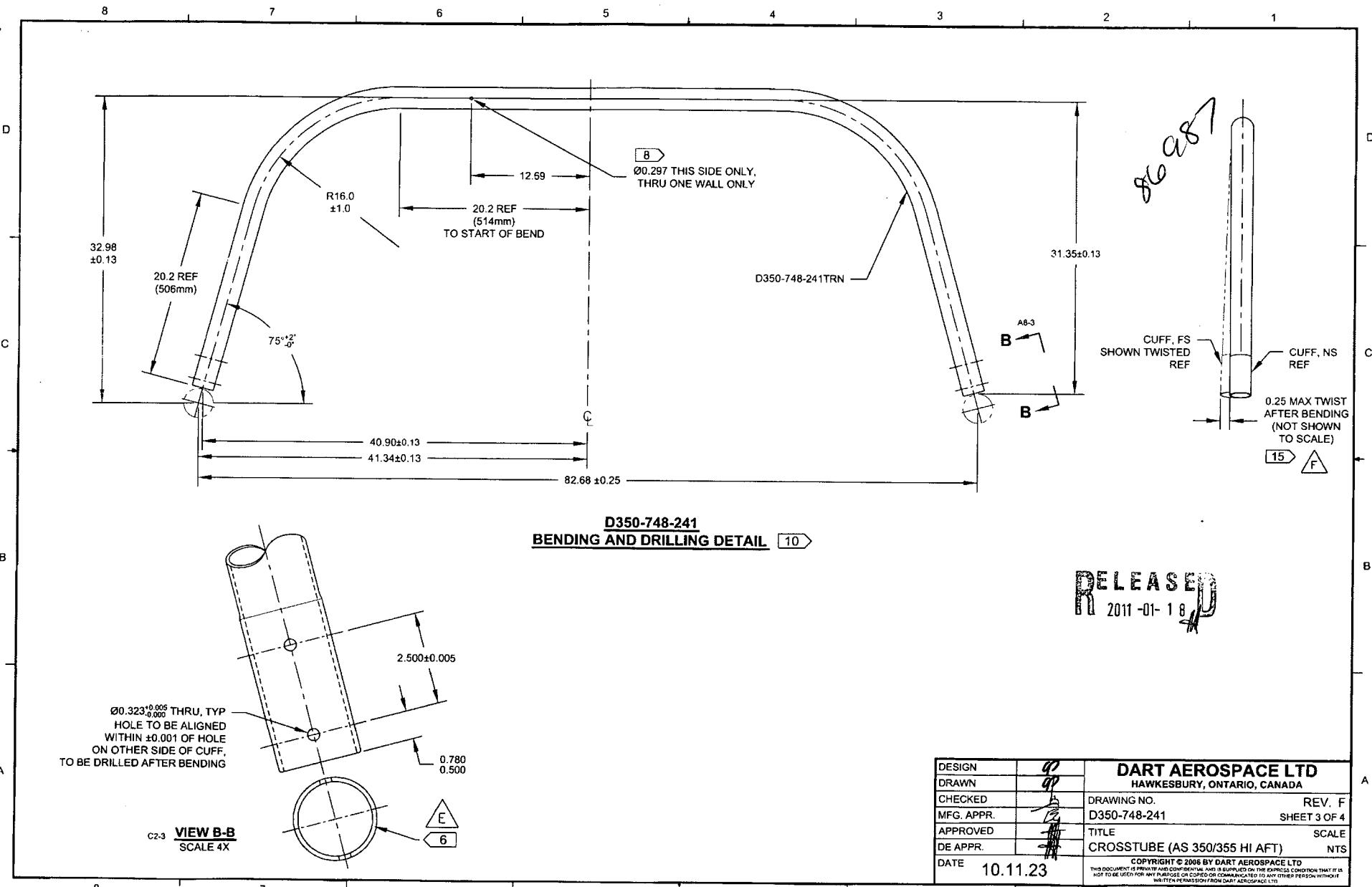
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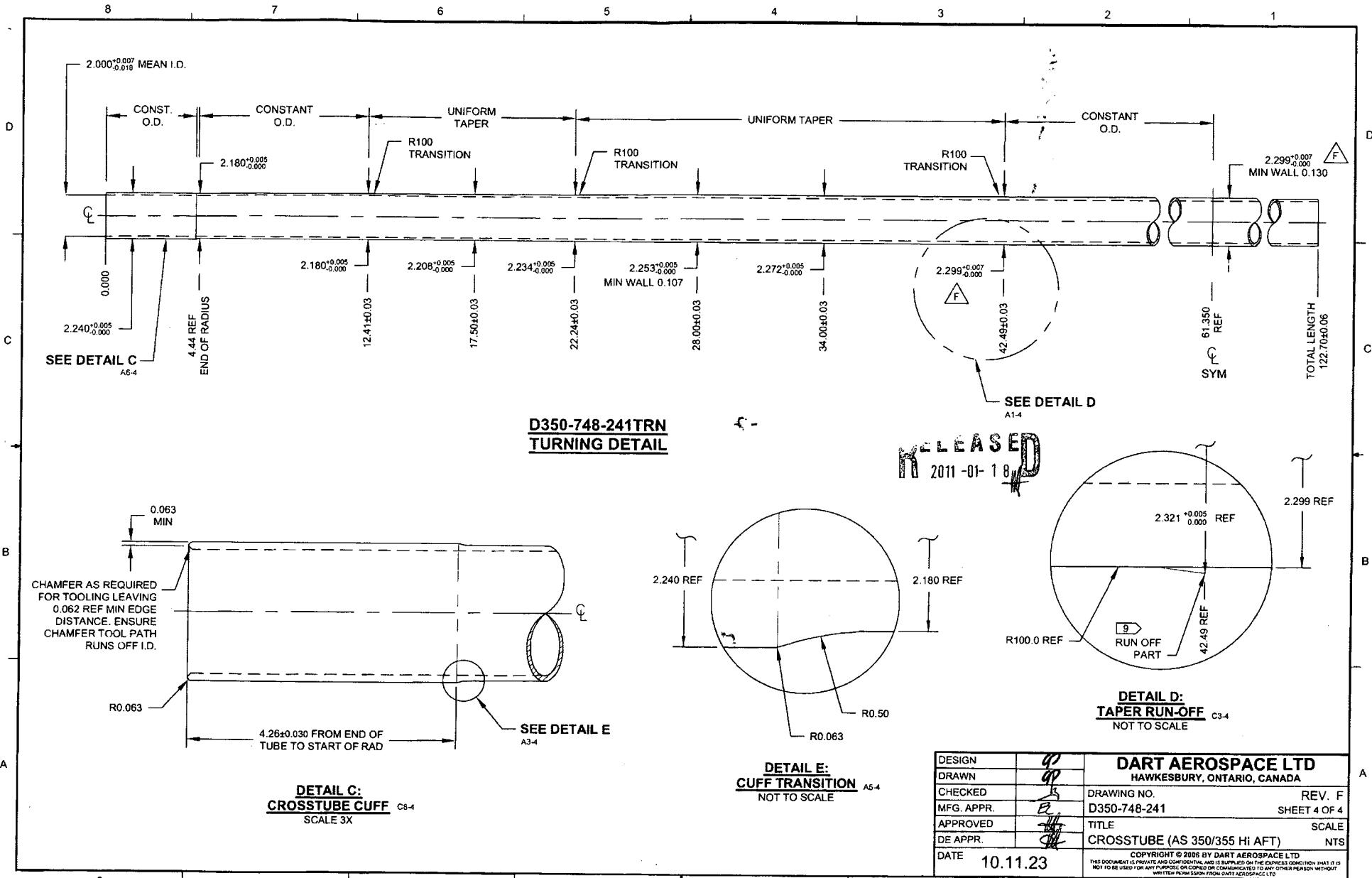
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DETAIL E:
CUFF TRANSITION A5-
NOT TO SCALE

DETAIL D:
TAPER RUN-OFF C3-4
NOT TO SCALE

DESIGN	99	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		
DRAWN	99			
CHECKED	15	DRAWING NO.	REV. F	
MFG. APPR.	PZ	D350-748-241	SHEET 4 OF 4	
APPROVED	TH	TITLE	SCALE	
DE APPR.	CH	CROSSTUBE (AS 350/355 HI AFT)	NTS	
DATE	10.11.23	COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS A PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE BY ANY PERSON OR PERSONS OTHER THAN THE PERSON TO WHOM IT WAS WRITTEN OR PURCHASED FROM DART AEROSPACE LTD		

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LAB
1000 E. MERMAID LANE
WYNDMOOR, PA 19038

Voice: 215-233-2600
Fax: 215-233-5653

Sold To:
DART AEROSPACE
1270 ABERDEEN STREET
HAWKESBURY, ON K6A 1K7

Ship To:
DART AEROSPACE
1270 ABERDEEN STREET
HAWKESBURY, ON K6A 1K7

Customer ID	PO Number	Payment Terms
DARA	PO17601	Net 30 Days
Ship Via	Process	
R & L CARRIER		

Quantity	Item	Description	Total Shipped	This Shipment
1.00		1 PC. 86987 D350-748-241TRN HEAT TREAT TO MIN 180 KSI (MIL-T-6736 OR AMD 2759-1C) SANDBLAST TUBE AFTER HEAT TREAT		
1.00		1 PC. 86988 D350-748-241TRN HEAT TREAT TO MIN 180 KSI (MIL-T-6736 OR AMD 2759-1C) SANDBLAST TUBE AFTER HEAT TREAT		
1.00		1 PC. 84668 D350-748-241TRN HEAT TREAT TO MIN 180 KSI (MIL-T-6736 OR AMD 2759-1C) SANDBLAST TUBE AFTER HEAT TREAT		SP 128-21

COMMENTS

SHIPPED BY, SIGNATURE
METLAB

DATE

RECEIVED BY, SIGNATURE
DART AEROSPACE

DATE

Sales Order
Aug 8,

LAB
1000 E. MERMAID LANE
WYNDMOOR, PA 19038

Voice: 215-233-2600
Fax: 215-233-5653

Sold To:
DART AEROSPACE
1270 ABERDEEN STREET
HAWKESBURY, ON K6A 1K7

Ship To:
DART AEROSPACE
1270 ABERDEEN STREET
HAWKESBURY, ON K6A 1K7

Customer ID	PO Number	Payment Terms
DARA	PO17601	Net 30 Days
	Ship Via	<u>Process</u>
	R & L CARRIER	

Quantity	Item	Description	Total Shipped	This Shipment
1.00		1 PC. 84672 D350-748-241TRN HEAT TREAT TO MIN 180 KSI (MIL-T-6736 OR AMD 2759-1C) SANDBLAST TUBE AFTER HEAT TREAT		
1.00		1 PC. 84669 D350-748-241TRN HEAT TREAT TO MIN 180 KSI (MIL-T-6736 OR AMD 2759-1C) SANDBLAST TUBE AFTER HEAT TREAT		<i>Sp 12-8-21</i>
1.00		1 PC. 84677 D350-748-241TRN HEAT TREAT TO MIN 180 KSI (MIL-T-6736 OR AMD 2759-1C) SANDBLAST TUBE AFTER HEAT TREAT 180 POUNDS TOTAL		

COMMENTS

SHIPPED BY, SIGNATURE
METLAB

DATE

RECEIVED BY, SIGNATURE
DART AEROSPACE

DATE



1000 E. Mermaid La., Wyndmoor (Phila.) PA 19038-8093
Tel. (215) 233-2600 Fax (215) 233-5653

Invoice

Invoice Num
01141
Invoice Date
Aug 16, 20

Sold To:

DART AEROSPACE
1270 ABERDEEN STREET
HAWKESBURY, ON K6A 1K7

Ship To:

DART AEROSPACE
1270 ABERDEEN STREET
HAWKESBURY, ON K6A 1K7

Customer ID		Customer PO	Payment Terms	
DARA		PO17601	Net 30 Days	
Shop Order No.		Shipping Method	Ship Date	Due Date
Quantity	Item	Description	Unit Price	Extensi
1		1 PC. 86987 D350-748-241TRN HEAT TREAT TO MIN 180 KSI (MIL-T-6736 OR AMD 2759-1C) SANDBLAST TUBE AFTER HEAT TREAT	205.000	20
1		1 PC. 86988 D350-748-241TRN HEAT TREAT TO MIN 180 KSI (MIL-T-6736 OR AMD 2759-1C) SANDBLAST TUBE AFTER HEAT TREAT	205.000	20
1		1 PC. 84668 D350-748-241TRN HEAT TREAT TO MIN 180 KSI (MIL-T-6736 OR AMD 2759-1C) SANDBLAST TUBE AFTER HEAT TREAT	205.000	20
1		1 PC. 84672	205.000	20

ANY DISCREPANCIES MUST BE REPORTED WITHIN 10 DAYS AFTER RECEIPT.

We accept AMEX, Visa & Master Card



Heat Treating and Metallurgical Consulting

Subtotal	Contir
Shipping/Handling	Contir
Total Invoice Amount	Contir
Payment Received	Contir
TOTAL	Contir

Visit our Web Site: <www.thomasregister.com/metlab/>



1000 E. Mermaid La., Wyndmoor (Phila.) PA 19038-8093
Tel. (215) 233-2600 Fax (215) 233-5653

Invoice

Invoice Num
0114.
Invoice D
Aug 16, 20

Sold To:

DART AEROSPACE
1270 ABERDEEN STREET
HAWKESBURY, ON K6A 1K7

Ship To:

DART AEROSPACE
1270 ABERDEEN STREET
HAWKESBURY, ON K6A 1K7

Customer ID	Customer PO	Payment Terms		
DARA	PO17601	Net 30 Days		
Shop Order No.	Shipping Method	Ship Date	Due Date	
73369	R & L CARRIER	8/16/12	9/15/12	
Quantity	Item	Description	Unit Price	Extensi
1		D350-748-241TRN HEAT TREAT TO MIN 180 KSI (MIL-T-6736 OR AMD 2759-1C) SANDBLAST TUBE AFTER HEAT TREAT		
1	1 PC. 84669	D350-748-241TRN HEAT TREAT TO MIN 180 KSI (MIL-T-6736 OR AMD 2759-1C) SANDBLAST TUBE AFTER HEAT TREAT	205.000	20
1	1 PC. 84677	D350-748-241TRN HEAT TREAT TO MIN 180 KSI (MIL-T-6736 OR AMD 2759-1C) SANDBLAST TUBE AFTER HEAT TREAT 180 POUNDS TOTAL	205.000	20

ANY DISCREPANCIES MUST BE REPORTED WITHIN 10 DAYS AFTER RECEIPT.

We accept AMEX, Visa & Master Card



Heat Treating and Metallurgical Consulting

Subtotal	1,23
Shipping/Handling	
Total Invoice Amount	1,23
Payment Received	

TOTAL 1,23

Visit our Web Site: <www.thomasregister.com/metlab/>

North American Free Trade Agreement

Certificate of Origin

Please print or type

1. Exporter's Name and Address: Metlab 1000 E. Mermaid Lane Wyndmoor, PA 19038		2. Blanket Period: (dd/mm/yyyy) From: 01/01/2012 To: 31/12/2012				
Tax Identification Number: 23-2973306						
3. Producer's Name and Address: Metlab 1000 E. Mermaid Lane Wyndmoor, PA 19038		4. Importer's Name and Address: Dart Aerospace 1270 Aberdeen Street Hawkesbury, ON K6A 1K7 CANADA				
Tax Identification Number: 23-2973306		Tax Identification Number:				
5. Description of Good(s)		6. HS Tariff Classification Number	7. Preference Criterion	8. Producer	9. Net Cost	10. Country of Origin
Heat Treatment Services		8483.401	C	Yes	No	USA
11. I CERTIFY THAT: <ul style="list-style-type: none"> * the information on this document is true and accurate and I assume the responsibility for proving such representations. I understand that I am liable for any false statements or material omissions made on or in connection with this document; * I agree to maintain, and present upon request, documentation necessary to support this Certificate, and to inform, in writing, all persons to whom the Certificate was given of any changes that would affect the accuracy or validity of this Certificate; * the goods originated in the territory of one or more of the Parties, and comply with the origin requirements specified for those goods in the North American Free Trade Agreement, and unless specifically exempted in Article 411 or Annex 401, there has been no further production or any other operation outside the territories of the Parties; and * this Certificate consists of <u>One (1)</u> page, including all attachments. 						
Authorized Signature: 			Company: Metlab			
Name: Mark Podob			Title: Vice President			
Date: (mm/dd/yyyy) 8/16/2012	Telephone: 215-233-2600			Fax: 215-233-5653		



1000 E. Mermaid Ln., Wyndmoor (Phila.) PA 19038-8093
Tel. (215) 233-2600 Fax (215) 233-5653

ORDER ACKNOWLEDGEMENT

613 632 1053

E-MAILED TO: _____ FAXED TO: _____

QP4.7.2.2-01

Rev A 5/10/10

CUSTOMER:	PO NUMBER:
Dart Aerospace	P0176001
DATE MATERIAL RECEIVED:	METLAB QUOTE NUMBER: <i>n/a</i>
8/8/2012	Or, MINIMUM STD ORDER(CHECK)
ESTIMATED SHIP DATE:	METLAB S.O. NUMBER:
8/15/12	73369

THANK YOU FOR YOUR ORDER. WE WILL MAKE OUR BEST EFFORT TO SHIP YOUR ORDER ON OR BEFORE THE ESTIMATED SHIP DATE SHOWN ABOVE. IF YOU NEED TO CONTACT US REGARDING THIS ORDER, PLEASE REFERENCE THE METLAB S.O. NUMBER SHOWN ABOVE.

QUOTATION MISSING? <input checked="" type="checkbox"/>	OK TO PROCESS WITHOUT <i>DR</i>
PURCHASE ORDER MISSING? _____	OK TO START PROCESSING WITHOUT _____
NOTE THAT WE NEED THE FOLLOWING INFORMATION IN ORDER TO COMPLETE YOUR ORDER AND TO MEET THE PROMISED SHIP DATE:	

TECHNICAL INFORMATION REQUIRED(LIST) : _____	ON HOLD : YES <input type="checkbox"/> NO <input type="checkbox"/>
OTHER INFORMATION OR CLARIFICATION: _____	ON HOLD: YES <input type="checkbox"/> NO <input type="checkbox"/>
RELEASED FOR PROCESSING BY: <i>An</i>	DATE: <i>8/8/12</i>

ACKNOWLEDGED BY: _____	SHIPPED DATE: _____
TODAY'S DATE: _____	_____

THIS ORDER IS ACKNOWLEDGED WITH THE UNDERSTANDING THAT THE ABOVE PURCHASE ORDER IS IN ACCORDANCE WITH METLAB'S TERMS AND CONDITIONS OF SALE AS SUBMITTED AT THE TIME OF THE ABOVE QUOTATION.



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO17601

Purchase Order Date 8/2/2012
PO Print Date 8/2/2012

Page Number 1 of 2

Order From : VU-MET001

METLAB
1000 E. MERMAID LANE
WYNDMOOR, PA 19038
USA

Contact Name	Buyer	Brigitte Golden
Vendor Phone	Requisition Nbr	
Vendor Fax	Tax Resale Nbr	10127-2607
Vendor Account Nbr	Terms	Net 30
	Currency	USD
	FOB	Destination-Collect

Ship To : DART AEROSPACE LTD 1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Line Nbr	Reference Revision ID	Description/ Mfg ID	Req Date/ Taxable	Req Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
	Vendor Part Number						
1	86987 ✓	D350-748-241TRN Crosstube	8/13/2012	1.00	Day & Ross ppd	\$205.0000	\$205.0000
			Yes				
		Special Inst:	HEAT TREAT TO MIN 180 KSI (MIL-T-6736 OR AMS 2759-1C) SAND BALST TUBE AFTER HEAT TREAT CETIFICATIONS				
2	86988 ✓	D350-748-241TRN Crosstube	8/13/2012	1.00	Day & Ross ppd	\$205.0000	\$205.0000
			Yes				
3	84668 ✓	D350-748-241TRN Crosstube	8/13/2012	1.00	Day & Ross ppd	\$205.0000	\$205.0000
		Special Inst:	SAME AS ABOVE				
			Yes				
		Special Inst:	SAME AS ABOVE				

No substitution or deviation without consent.
Certificate of Conformity or Material Certification required - YES NO

Change Nbr: 1

Change Date: 8/2/2012

SP 12-8-21



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO17601**

Purchase Order Date 8/2/2012
PO Print Date 8/2/2012

Page Number 2 of 2

Order From : VU-MET001
METLAB
1000 E. MERMAID LANE
WYNDMOOR, PA 19038
USA

Contact Name	Buyer	Brigitte Golden
Vendor Phone	Requisition Nbr	
215-233-2600	Tax Resale Nbr	10127-2607
Vendor Fax	Terms	Net 30
215-233-5653	Currency	USD
Vendor Account Nbr	FOB	Destination-Collect

4	84672	D350-748-241TRN Crosstube	8/13/2012	1.00	Day & Ross ppd	\$205.0000	\$205.00
			Yes				
5	84669	D350-748-241TRN Crosstube	8/13/2012	1.00	Day & Ross ppd	\$205.0000	\$205.00
			Yes				
6	84677	D350-748-241TRN Crosstube	8/13/2012	1.00	Day & Ross ppd	\$205.0000	\$205.00
			Yes				
		Special Inst:	Same as above				
		Special Inst:	Same as above				
		Special Inst:	Same as above				
		Special Inst:	Same as above				
		PO Total:	\$1,230.00				

8/12/2012
No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required - YES NO

Change Nbr: 1

Change Date: 8/2/2012

Brigitte Golden

From: Mark Podob <mpodob@metlabheatheat.com>
Sent: Thursday, August 02, 2012 10:15 AM
To: Doris Funches; Dan Krackovic; Eugene Roberts
Cc: Brigitte Golden
Subject: FW: New PO17601 from Dart
Attachments: D350-748-241-RevF.pdf; PO17601 Metlab.pdf

Importance: High

New P.O. from Dart.

Mark Podob
Vice President, Marketing and Sales
Metlab
1000 E. Mermaid Lane
Wyndmoor, PA 19038
215-233-2600 Ext. 232
(F) 215-233-5653
mpodob@metlabheatheat.com

This message and any attachments are intended for the individual or entity named above. If you are not the intended recipient, please do not forward, copy, print, use or disclose this communication to others; also please notify the sender replying to this message and then delete it from your system.

From: Brigitte Golden [<mailto:bgolden@dartaero.com>]
Sent: Thursday, August 02, 2012 9:59 AM
To: Mark Podob
Cc: 'Linda Lacelle'
Subject: New PO17601 from Dart
Importance: High

Good Morning Mark!

Please find attached new PO for 6 crosstubes to be heat treated.

They are leaving today with Day & Ross this afternoon, tracking # OTT 19872092

Thank You

Brigitte Golden
Order Processing
DARTAEROSPACE Ltd.

1270 Aberdeen Street
Hawkesbury Ontario
Canada K6A 1K7
Tel:(613)632-5200 Ext 224
Fax:(613)632-1053

bgolden@dartaero.com



Please consider your environmental responsibility before printing this e-mail

From: Brigitte Golden [<mailto:bgolden@dartaero.com>]
Sent: Friday, July 27, 2012 11:19 AM
To: 'mpodob@metlabheatheat.com'
Cc: 'Linda Lacelle'
Subject: PO17555 from Dart

Please find attached the PO
Thank You

From: Linda Lacelle [<mailto:llacelle@dartaero.com>]
Sent: Thursday, July 26, 2012 2:36 PM
To: mpodob@metlabheatheat.com
Cc: Brigitte Golden
Subject: more tubes

Hi Mark,

We will be shipping out 9 tubes tomorrow for heat treat. Another batch should follow end of next week. As always, I need these asap..

Thx!

Linda Lacelle
Production manager
Dart Aerospace



Commercial Invoice:145

Ship From: Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Canada
Tel # 1.613.632.5200
GST # RT101272607

Ship To: METLAB
1000 E Mermaid LN
Wyndmoor
PA, 19038 US

ATTN: Mark Podob
PH# 215 233 2600

Date: 2-Aug-12 **P.O. #** 17555 **Broker:** UPS SCS
PH#: 800 443-6379

Ship Via: Day & Ross PPD **FOB:** Origin

Item	Part Number / Product Description	Tariff Class.	Quantity	Unit Price	Total
1	Crosstube D350-748-241	8803.20	6	\$ 1,250.00	\$ 7,500.0
2					
3					
4					

All Prices are in US Dollars

All of the above parts were made in Canada unless otherwise indicated

THIS IS A CUSTOMS INVOICE ONLY

Sub Total \$7,500.00

Total \$7,500.00

Amount Due: \$7,500.00

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Canada
Tel.: 1.613.632.5200
Fax: 1.613.632.1185
GST # RT101272607



NIR R-500048-S

VOL 904

DAY & ROSS

STRAIGHT BILL OF LADING - 1.866.DAY.ROSS

BILLER INIT. INITIÉ POUR LA FACTURATION	OFF UNIT DÉCHARGE DU VÉHICULE NO.	NO. OF PIECES QUANTITÉ DE MORCEAUX
		INIT INITI
DAY & ROSS	ON UNIT CHARGÉ DANS VÉHICULE NO.	NO. OF PIECES QUANTITÉ DE MORCEAUX

MONTH	DATE	YEAR	LEVEL OF SERVICE	C.O.D	
08	2	12	<input type="checkbox"/> GENERAL	AMOUNT _____ CURRENCY: <input type="checkbox"/> CDN <input type="checkbox"/> U.S.	
			<input type="checkbox"/> PRIVATE RESIDENCE PICK UP <input type="checkbox"/> PRIVATE RESIDENCE DELIVERY <input type="checkbox"/> PALLETS BEING RETURNED <input type="checkbox"/> HAZARDOUS GOODS* <input type="checkbox"/> APPOINTMENT DELIVERY(DATE/TIME)	<input type="checkbox"/> TAILGATE PICK-UP <input type="checkbox"/> HEATED SERVICE <input type="checkbox"/> TRADE SHOW PU <input type="checkbox"/> INBOND	<input type="checkbox"/> TAILGATE DELIVERY <input type="checkbox"/> TEMPERATURE CONTROL(TL ONLY) <input type="checkbox"/> TRADE SHOW DELIVERY
			*this shipment contains dangerous goods as set out in the attached shipper's declaration		
			REQUESTED BY: <input type="checkbox"/> SHIPPER <input type="checkbox"/> CONSIGNEE <input type="checkbox"/> BILL TO <input type="checkbox"/> THIRD		
			EMAIL: _____		

SHIPPER DAY & ROSS ACCT. NO. <u>038326</u>	TEL NO. <u>6136325200</u>	CONSIGNEE DAY & ROSS ACCT. NO. _____	TEL. NO. <u>215233</u>
SHIPPER'S NAME <u>DART Aerospace</u>	CONSIGNEE'S NAME <u>Metlab</u>	DELIVERY ADDRESS <u>1000 E. Mermaid Lane</u>	
PICK UP ADDRESS <u>1270 Aberdeen St</u>		City <u>Wyndmoor</u>	Prov. <u>PA</u> Country <u>19021</u> Postal Code
CITY <u>Hawkesbury</u>	PROV. <u>ON</u>	COUNTRY <u>Canada</u>	POSTAL CODE

METHOD OF PAYMENT			OTHER BILL TO PARTICULARS		
<input checked="" type="checkbox"/> PREPAID	<input type="checkbox"/> COLLECT		BILL TO:		
<input type="checkbox"/> CASH IN ADVANCE	AMOUNT <input type="text"/>	CURRENCY: <input type="checkbox"/> CDN	BILL TO ADDRESS		
<input type="checkbox"/> THIRD PARTY BILL TO	ACCOUNT NUMBER <input type="text"/>				
<input type="checkbox"/> VISA	<input type="checkbox"/> M.C.	<input type="checkbox"/> AMX	EXPIRY DATE <input type="text"/>		
CARD NO <input type="text"/>					
SPOT QUOTE NO.	ROUTING OR SPECIAL INSTRUCTIONS			GST: CITY <input type="text"/> PROV. <input type="text"/> COUNTRY <input type="text"/> POSTAL CODE <input type="text"/>	
			MAXIMUM LIABILITY OF \$2.00/LB OR \$4.41/KG COMPUTED ON THE TOTAL ACTUAL WEIGHT UNLESS DECLARED. VALUATION STATES OTHERWISE. PLEASE SEE ADDITIONAL TERMS AND CONDITIONS ON REVERSE.		

NO. OF PCS.	DESCRIPTION OF ARTICLES AND SPECIAL MARKS	WEIGHT <input checked="" type="checkbox"/> LBS <input type="checkbox"/> KGS	DECLARED VALUE <input type="checkbox"/> CDN. <input type="checkbox"/> U.S.	DIMENSIONS
	<u>Aircraft parts</u>			
	<u>Cross tube</u>			
3	<u>cardboard cartons</u>	180		<u>127x131x7</u>

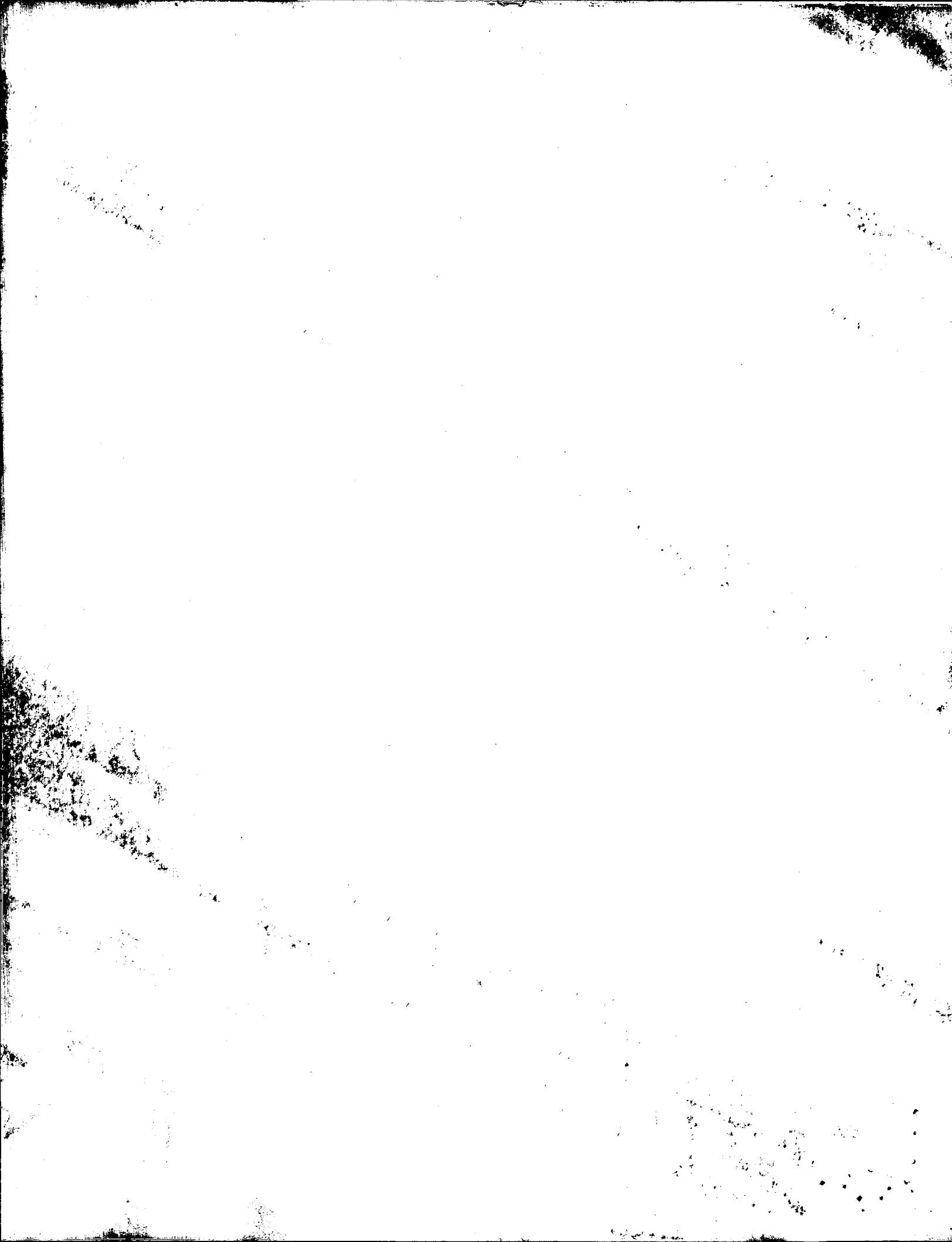
ALL USED HOUSEHOLD GOODS AND PERSONAL EFFECTS SHIPPED AT SHIPPER'S RISK OF DAMAGE

The uniform TERMS OF CARRIAGE apply to
this BILL OF LADING. (See Term and Condition
No. 1)NOTICE OF CLAIM must be submitted in
writing within sixty (60) days of delivery. (See Term and
Condition No. 2)The carrier's maximum liability is limited by the TERM
CONDITIONS of the Bill of Lading. (See Term and C
No. 5)

SHIPPER'S REF. NO. PO 17001
 SHIPPER'S SIGNATURE Bogilia Alda
 PRINT BRIGITTE Golden

PICK-UP DATE 08-02-2012 NO. OF PCS.
 DAY & ROSS DRIVER Denis PURCHASE ORDER
 POWER NO. 2700604 TRAILER NO.

1987209.2





Manufacturing Inc.

772 MAIN STREET E., P.O. BOX 3,
HAWKESBURY, ONTARIO K6A 2R4

TEL: (613) 632-0921
FAX: (613) 632-2681

Packing Slip

Date	Page
Sep 24, 2012	1
Shipment Number	
SH005312	

Sold To:

Dee's PACE
1270 ABERDEEN STREET
HAWKESBURY, ON K6A 1K7
CANADA

Ship To:

DART AEROSPACE
1270 ABERDEEN STREET
HAWKESBURY, ON K6A 1K7
CANADA

Ref. No.	PO Number	Customer No.	Order No.	Ship Via	Order Date
-0	17979	DAR100	OR005146		September 24, 2012

Item Number	Description	Qty. Ordered	UOM	Qty. Shipped	Qty. Backord.
MS-12-1	DART AEROSPACE - SANDBLAST 9 PIPES	9.00	EA	9.00	0.00

Customer:

Prepared:

Total weight:

Total packages:

*** THANK YOU FOR YOUR BUSINESS ***

